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Biobased Industry in Wisconsin: Policy Recommendations

Presentation to the Governor's Consortium on Biobased Industry
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YOUR PARTNERS IN ENERGY RESEARCH, EDUCATION & CONSULTING

“I would say the development of the bioenergy industry is 10 percent technology and 90 percent policy.”

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Five policy categories

1. **Organize, coordinate and build Wisconsin's capacities in the bioeconomy**
2. **Increase or enhance biobased feedstock supplies**
3. **Accelerate technology research, development and demonstration in Wisconsin**

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Five policy categories

4. **Increase and stabilize demand for biobased products**
5. **Support business development in the bioeconomy**

“In the near term, you’re not going to effect a massive change in the state culture or the state infrastructure on the education side or its ability to develop technology. What you’re going to be looking for in a five-year timeframe is, how do you piece together the things you’ve already got in a way that puts you in a better spot?”

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Organize, coordinate and build Wisconsin's capacities in the bioeconomy

1.1 Bioeconomy Center

1.2 Policy/regulatory review

1.3 State databases

1.4 Entrepreneurship

1.5 Upper Midwest Consortium

1.6 Carbon credits

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Organize, coordinate and build Wisconsin's capacities in the bioeconomy

1.7 Interconnection

1.8 Regulatory capacity

1.9 Aggressive outreach

1.10 Match R&D to money

1.11 Build capacity at tech schools

“When we look at the future, the world is going to need thousands of biorefineries. … I think biomass can completely supply all the chemicals and building products that we need as a society, forever.”

Increase or enhance biobased feedstock supplies

2.1 Midwest Biomass Exchange

2.2 Land management

“You can produce cellulose anywhere, so Wisconsin’s biorefining effort has to be linked to intellectual capital of some sort that can’t be replicated. If we could have the same kind of energy behind biobased as we have around biotech …. Just look at the number of jobs that have been generated here as a spin-off from the university. It’s not like we don’t have a prototype for it.”

Accelerate technology research, development and demonstration in Wisconsin

3.1 Matching fund for RD&D

3.2 First installation incentives

“You need to have the market there before you build the production. If grain ethanol gets ethanol into the public’s consciousness, and people are buying more flex-fuel vehicles or there’s more stations, that’s all great … if it’s laying the groundwork for this other future that I want to see.”

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Increase and stabilize demand for biobased products

4.1 Renewable Fuel Standards

4.2 Renewable Portfolio Standard

4.3 Buy-back rates

4.4 Net metering

4.5 Government purchasing

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Increase and stabilize demand for biobased products

4.6 Private purchasing

4.7 Encourage biorefining

4.8 Increase ethanol use

“There are typically a lot of people more than willing to invest in a second plant. But you never have the first one, so it never gets anyplace. And that, to me, is a place where government plays an appropriate role.”

Support business development in the bioeconomy

5.1 Production payments

5.2 Project finance

5.3 Scoping studies

5.4 Regional processing

“There are some oil companies that, in one quarter, are making more profit than the US has invested in biomass in the last 25 years.”

“One simple slogan is,
‘Engineering tells us what can be done.
Economics tells us what should be done.
Politics tells us what will be done.’
If there’s no political will,
then it’s not going to happen.”

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1.1 Bioeconomy Center

- Develop a constancy of purpose on Wisconsin's future in bioeconomy
  - Government
  - Industry
  - University
- Case study: BIOWA

1.2 Policy/regulatory review

- **Bioeconomy issues were not envisioned when the original policies and laws were developed**
  - **Review existing policies**
  - **Establish clear, consistent policies**

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1.3 State databases

- State databases do not collect data relevant for bioeconomy activities
  - Volumes
  - Locations
- Review existing state databases
  - Develop new databases as appropriate
  - Update data collection patterns

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1.4 Entrepreneurship

- **Convene statewide and smaller regional "tables" of stakeholders to facilitate planning in a consistent and organized manner**
  - **Workforce training curriculum for bioindustry jobs**
  - **DNR Green Tier to "pre-approve" techs**
  - **Promote biobased products as route to Green Tier charter**

1.5 Upper Midwest Consortium

- No one state will have …
  - A large enough impact to change regional markets
  - Enough funding for all needed R&D
- Wisconsin should lead this effort
- Case study: Southern State Biobased Alliance

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1.6 Carbon credits

- Payments for carbon reductions can be an important revenue stream for startup biobased businesses
- Ensure that bioindustry facilities are able to benefit from future carbon credit trading programs
  - Join existing GHG reduction initiative
  - Create new Midwest alliance

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1.7 Interconnection

- **Electricity sales are the foundation for revenue generation by many biobased processing technologies**
  - **Standard forms and agreements reduce uncertainty to bioindustry, utilities**
  - **No clear procedures above 15MW**

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1.8 Regulatory capacity

- **Perception that regulator unfamiliarity with technology means delays**
  - **Build assessment capacity, capability and experience related to priority biotechnologies**

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1.9 Aggressive outreach

- State bioeconomy needs support—both legislature and grass roots
- Coordinated education plan
- Draw attention to job opportunities, value-added agriculture and forestry, entrepreneurial opportunities
- State endorsement of bio efforts

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1.10 Match R&D to money

- Tech transfer between investors and UW, federal labs
  - Facilitate spin-off companies that will locate in Wisconsin
  - Free faculty to become entrepreneurs
  - Work with WARF, Weintert Center

1.11 Build capacity at tech schools

- Industry will be hesitant to invest in biobased technologies if there is no workforce prepared to operate them
  - Fund curriculum development and certification programs
  - Iowa and Minnesota's new bioeconomy curricula have attracted more students than the curricula that were replaced

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2.1 Midwest Biomass Exchange

- **Major hurdles for use of residues**
  - **No formal market for residues**
  - **No standards or price premiums for quality, cleanliness or consistency**
- **Develop and headquarter a Midwest Regional Biomass Exchange to develop markets and create standards**

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2.2 Land management

- **Link sustainable production methods with sustainable, biobased products**
  - **Valuable use of stover promotes no-till**
  - **Sustainable forest practices can increase production**
- **Implement market-based systems that reward Wisconsin-grown feedstocks from no-till farming or certified sustainable forestry**

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3.1 Matching fund for RD&D

- Match federal dollars geared toward bioindustry R&D
- Prioritize R&D needs and allocate
- Intellectual property issues should be well-vetted prior to award

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3.2 First installation incentives

- **Risk mitigation for being the first to try new technology**
  - **Cost-share grants**
  - **Tax incentives**
- **Early industrial-scale facilities are in the state's interest**
  - **Provides state-of-the-art tech to R&D community**

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4.1 Renewable Fuel Standards

- Foundation upon which biobased chemicals industry will likely emerge
- Must have stable markets
  - E10 with 20% kicker, cellulosic bonus
  - B2 with 5% or 10% kicker
  - Percents, not blends, allow market flexibility
- Will encourage shift to flex-fuel cars

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4.2 Renewable Portfolio Standard

- Market stabilization for electricity
- 10% mandate currently in Governor's Task Force recommendations should be adopted
  - Wisconsin currently at 2.2% without hydropower

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4.3 Buy-back rates

- Research select technologies to determine stable utility buy-back rates
  - Reduces transaction costs of negotiating a PPA
- Provide developers with a predictable price
  - Anaerobic digestion for manure management
  - Municipal and industrial wastewater treatment
  - Forest biorefinery/black liquor gasification
- Ideally set at a level that triggers investment in biobased electricity generation

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4.4 Net metering

- Allows that all production in excess of customer's total usage is purchased by the utility at the customer's retail electricity rate
- 20 kW ceiling is not high enough
  - Raise max kW for net metering
  - Base net metering on demand charge
  - Consider "remote" net metering

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4.5 Government purchasing

- **Build demand by creating and implementing market standards for qualification as a biobased product**
  - **Lack of consumer awareness**
  - **Lack of buyer experience with bioproducts**
- **High profile actions and policies by the Governor set a standard for others to follow**

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4.6 Private purchasing

- Encourage and facilitate private purchase and use of bioproducts
- Modeled after tax incentives for Energy Star products?

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4.7 Encourage biorefining

- Grow and fund the bioeconomy by creating disincentives to dispose of biobased feedstocks or purchase fossil-based products
- Applying fees and fines that would normally go into the general revenue fund to bioeconomy projects instead

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4.8 Increase ethanol use

- Go above and beyond 10% RFS
- Label flex-fuel cars; list of stations
- Transition all state cars to flex-fuel
- Make state fleet E85 stations available to the public for now
- Encourage ethanol producers, co-ops to provide E85 stations

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5.1 Production payments

- **Augment federal incentives and emphasize biobased energy generation**
  - **Production tax credit**
  - **Competitively bid production incentives**

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5.2 Project finance

- Fund due diligence of biobased investment opportunities and share with private investors
- Share financing of biobased projects via:
  - Loans or equity financing
  - Subordinated debt
  - Project financing, loan guarantees for bank-funded ventures
  - Cooperative structures to manufacture, produce or sell biobased products
- Invest pensions in energy efficiency, renewables

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5.3 Scoping studies

- For existing industries, many biorefinery technologies require integration
- Companies may not risk capital without cost-share, incentives or other facilitated assistance
- This will build bioindustry expertise in state consulting industry and promote new tech adoption

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5.4 Regional processing

- Distributed nature of non-dense feedstocks hinder bioeconomy
- State-supported/state-owned regional processing facilities
  - Digesters
  - Biofuel plants with fueling stations
  - Centralized wood pelleting